



**NORTEL**

Nortel Ethernet Routing Switch 8600

# Installation — Media Dependent Adapters for the 8672ATME and 8672ATMM Modules

Release: 5.0

Document Revision: 01.01

[www.nortel.com](http://www.nortel.com)

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### **ATTENTION**

For information about the regulatory and safety precautions, read "Regulatory messages and safety precautions" in this guide.

For information about the software license, read "Software license" in this guide.

For a list of safety messages used in this guide and their translations, see "Translations of safety messages".

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# Regulatory Information and Safety Precautions

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Read the information in this section to learn about regulatory conformities and compliances.

## International Regulatory Statements of Conformity

This is to certify that the Nortel 8000 Series chassis and components installed within the chassis were evaluated to the international regulatory standards for electromagnetic compliance (EMC) and safety and were found to have met the requirements for the following international standards:

- EMC—Electromagnetic Emissions—CISPR 22, Class A
- EMC—Electromagnetic Immunity—CISPR 24
- Electrical Safety—IEC 60950, with CB member national deviations

Further, the equipment has been certified as compliant with the national standards as detailed in the following sections.

## National Electromagnetic Compliance (EMC) Statements of Compliance

### FCC Statement (USA only)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the Federal Communications Commission (FCC) rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to take whatever measures may be necessary to correct the interference at their own expense.

**ICES Statement (Canada only)**

**Canadian Department of Communications Radio Interference Regulations**

This digital apparatus (8000 Series chassis and installed components) does not exceed the Class A limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

**Règlement sur le brouillage radioélectrique du ministère des Communications**

Cet appareil numérique (8000 Series chassis) respecte les limites de bruits radioélectriques visant les appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique du ministère des Communications du Canada.

**CE Marking Statement (Europe only)**

**EN 55 022 Statements**

This is to certify that the Nortel 8000 Series chassis and components installed within the chassis are shielded against the generation of radio interference in accordance with the application of Council Directive 2004/108/EC. Conformity is declared by the application of EN 55 022 Class A (CISPR 22).



**CAUTION**

This device is a Class A product. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users are required to take appropriate measures necessary to correct the interference at their own expense.

**EN 55 024 Statement**

This is to certify that the Nortel 8000 Series chassis is shielded against the susceptibility to radio interference in accordance with the application of Council Directive 2004/108/EC. Conformity is declared by the application of EN 55 024 (CISPR 24).

**EN 300386 Statement**

The Ethernet Routing Switch 8000 Series chassis complies with the requirements of EN 300386 V1.3.3 for emissions and for immunity for a Class A device intended for use in either Telecommunications centre or locations other than telecommunications centres given the performance criteria as specified by the manufacturer.

**EC Declaration of Conformity**

This product conforms to the provisions of the R&TTE Directive 1999/5/EC.

## European Union and European Free Trade Association (EFTA) Notice



All products labeled with the CE marking comply with R&TTE Directive (1999/5/EEC) which includes the Electromagnetic Compliance (EMC) Directive (2004/108/EC) and the Low Voltage Directive (2006/95/EC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (ENs). The equivalent international standards are listed in parenthesis.

- EN 55022 (CISPR 22)—Electromagnetic Interference
- EN 55024 (IEC 61000-4-2, -3, -4, -5, -6, -8, -11)—Electromagnetic Immunity
- EN 61000-3-2 (IEC 61000-3-2)—Power Line Harmonics
- EN 61000-3-3 (IEC 61000-3-3)—Power Line Flicker

## VCCI Statement (Japan/Nippon only)

This is a Class A product based on the standard of the Voluntary Control Council for Interference (VCCI) for information technology equipment. If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

## BSMI Statement for 8010, 8006 and 8003 Chassis (Taiwan only)

This is a Class A product based on the standard of the Bureau of Standards, Metrology and Inspection (BSMI) CNS 13438, Class A.

警告使用者：

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

## MIC Notice for 8010, 8006, 8003 Chassis (Republic of Korea only)

This device has been approved for use in Business applications only per the Class A requirements of the Republic of Korea Ministry of Information and Communications (MIC). This device may not be sold for use in a non-business application.



## National Safety Statements of Compliance

### CE Marking Statement (Europe only)

#### EN 60 950 Statement

This is to certify that the Nortel 8000 Series chassis and components installed within the chassis are in compliance with the requirements of EN 60 950 in accordance with the Low Voltage Directive. Additional national differences for all European Union countries have been evaluated for compliance. Some components installed within the 8000 Series chassis may use a nickel-metal hydride (NiMH) and/or lithium-ion battery. The NiMH and lithium-ion batteries are long-life batteries, and it is very possible that you will never need to replace them. However, should you need to replace them, refer to the individual component manual for directions on replacement and disposal of the battery.

#### NOM Statement 8010, 8006, and 8003 Chassis (Mexico only)

The following information is provided on the devices described in this document in compliance with the safety requirements of the Norma Oficial Mexicana (NOM):

Exporter:	Nortel Networks, Inc.
	4655 Great America Parkway
	Santa Clara CA 95054 USA
Importer:	Nortel Networks de México, S.A. de C.V.
	Avenida Insurgentes Sur #1605
	Piso 30, Oficina
	Col. San Jose Insurgentes
	Deleg-Benito Juarez



México D.F. 03900

Tel: 52 5 480 2100

Fax: 52 5 480 2199

Input: Model 8003AC:  
100-240 VAC, 50-60 Hz, 9 A maximum for each power supply

Model 8004AC:  
100-240 VAC, 50-60 Hz, 12-6 A maximum for each power supply

Model 8005AC:  
100-120 VAC, 50-60 Hz, 16 A maximum for each power supply  
200-240 VAC, 50-60 Hz, 8.5 A maximum for each power supply

Model 8005DI AC:  
100-120 VAC, 50-60 Hz, 16 A maximum for each power supply  
200-240 VAC, 50-60 Hz, 9.3 A maximum for each power supply

Model 8004DC:  
48-60 VDC, 29-23 A

Model 8005DC:  
48-60 VDC, 42-34 A

**Información NOM (unicamente para México)**

La información siguiente se proporciona en el dispositivo o en los dispositivos descritos en este documento, en cumplimiento con los requisitos de la Norma Oficial Mexicana (NOM):

Exportador: Nortel Networks, Inc.  
4655 Great America Parkway  
Santa Clara, CA 95054 USA

Importador: Nortel Networks de México, S.A. de C.V.  
Avenida Insurgentes Sur #1605  
Piso 30, Oficina

Col. San Jose Insurgentes

Deleg-Benito Juarez

México D.F. 03900

Tel: 52 5 480 2100

Fax: 52 5 480 2199

Embarcar a: Model 8003AC:

100-240 VCA, 50-60 Hz, 9 A max. por fuente de poder

Model 8004AC:

100-240 VCA, 50-60 Hz, 12-6 A max. por fuente de poder

Model 8005AC:

100-120 VCA, 50-60 Hz, 16 A max. por fuente de poder

200-240 VCA, 50-60 Hz, 9.5 A max. por fuente de poder

Model 8005DI AC:

100-120 VCA, 50-60 Hz, 16 A max por fuente de poder

200-240 VCA, 50-60 Hz, 9.3 A max por fuente de poder

Model 8004DC:

-48 VCD, 29 A

Model 8005DC:

-48 VCD, 42 A

### Denan Statement (Japan/Nippon only)



#### 警告

本製品を安全にご使用頂くため、以下のことにご注意ください。

- 接続ケーブル、電源コード、ACアダプタなどの部品は、必ず製品に同梱されております添付品または指定品をご使用ください。添付品・指定品以外の部品をご使用になると故障や動作不良、火災の原因となることがあります。
- 同梱されております付属の電源コードを他の機器には使用しないでください。上記注意事項を守らないと、死亡や大怪我など人身事故の原因となることがあります。

## Safety Messages

This section describes the different precautionary notices used in this document. This section also contains precautionary notices that you must read for safe operation of the Nortel Ethernet Routing Switch 8600.

### Notices

Notice paragraphs alert you about issues that require your attention. The following sections describe the types of notices. For a list of safety messages used in this guide and their translations, see "Translations of safety messages".

#### Attention Notice

##### **ATTENTION**

An attention notice provides important information regarding the installation and operation of Nortel products.

#### Caution ESD Notice



##### **CAUTION ESD**

ESD notices provide information about how to avoid discharge of static electricity and subsequent damage to Nortel products.



##### **CAUTION ESD (décharge électrostatique)**

La mention ESD fournit des informations sur les moyens de prévenir une décharge électrostatique et d'éviter d'endommager les produits Nortel.



##### **CAUTION ACHTUNG ESD**

ESD-Hinweise bieten Information dazu, wie man die Entladung von statischer Elektrizität und Folgeschäden an Nortel-Produkten verhindert.



##### **CAUTION PRECAUCIÓN ESD (Descarga electrostática)**

El aviso de ESD brinda información acerca de cómo evitar una descarga de electricidad estática y el daño posterior a los productos Nortel.



##### **CAUTION CUIDADO ESD**

Os avisos do ESD oferecem informações sobre como evitar descarga de eletricidade estática e os conseqüentes danos aos produtos da Nortel.



**CAUTION**  
**ATTENZIONE ESD**

Le indicazioni ESD forniscono informazioni per evitare scariche di elettricità statica e i danni correlati per i prodotti Nortel.

**Caution Notice**



**CAUTION**

Caution notices provide information about how to avoid possible service disruption or damage to Nortel products.



**CAUTION**  
**ATTENTION**

La mention Attention fournit des informations sur les moyens de prévenir une perturbation possible du service et d'éviter d'endommager les produits Nortel.



**CAUTION**  
**ACHTUNG**

Achtungshinweise bieten Informationen dazu, wie man mögliche Dienstunterbrechungen oder Schäden an Nortel-Produkten verhindert.



**CAUTION**  
**PRECAUCIÓN**

Los avisos de Precaución brindan información acerca de cómo evitar posibles interrupciones del servicio o el daño a los productos Nortel.



**CAUTION**  
**CUIDADO**

Os avisos de cuidado oferecem informações sobre como evitar possíveis interrupções do serviço ou danos aos produtos da Nortel.



**CAUTION**  
**ATTENZIONE**

Le indicazioni di attenzione forniscono informazioni per evitare possibili interruzioni del servizio o danni ai prodotti Nortel.

**Warning Notice**



**WARNING**

Warning notices provide information about how to avoid personal injury when working with Nortel products.



**WARNING  
AVERTISSEMENT**

La mention Avertissement fournit des informations sur les moyens de prévenir les risques de blessure lors de la manipulation de produits Nortel.



**WARNING  
WARNUNG**

Warnhinweise bieten Informationen dazu, wie man Personenschäden bei der Arbeit mit Nortel-Produkten verhindert.



**WARNING  
ADVERTENCIA**

Los avisos de Advertencia brindan información acerca de cómo prevenir las lesiones a personas al trabajar con productos Nortel.



**WARNING  
AVISO**

Os avisos oferecem informações sobre como evitar ferimentos ao trabalhar com os produtos da Nortel.



**WARNING  
AVVISO**

Le indicazioni di avviso forniscono informazioni per evitare danni alle persone durante l'utilizzo dei prodotti Nortel.

**Danger High Voltage Notice**



**DANGER**

Danger—High Voltage notices provide information about how to avoid a situation or condition that can cause serious personal injury or death from high voltage or electric shock.



**DANGER**

La mention Danger—Tension élevée fournit des informations sur les moyens de prévenir une situation ou une condition qui pourrait entraîner un risque de blessure grave ou mortelle à la suite d'une tension élevée ou d'un choc électrique.



**DANGER  
GEFAHR**

Hinweise mit Vorsicht – Hochspannung“ bieten Informationen dazu, wie man Situationen oder Umstände verhindert, die zu schweren Personenschäden oder Tod durch Hochspannung oder Stromschlag führen können.



**DANGER  
PELIGRO**

Los avisos de Peligro-Alto voltaje brindan información acerca de cómo evitar una situación o condición que cause graves lesiones a personas o la muerte, a causa de una electrocución o de una descarga de alto voltaje.



**DANGER  
PERIGO**

Avisos de Perigo—Alta Tensão oferecem informações sobre como evitar uma situação ou condição que possa causar graves ferimentos ou morte devido a alta tensão ou choques elétricos.



**DANGER  
PERICOLO**

Le indicazioni Pericolo—Alta tensione forniscono informazioni per evitare situazioni o condizioni che potrebbero causare gravi danni alle persone o il decesso a causa dell'alta tensione o di scosse elettriche.

**Danger Notice**



**DANGER**

Danger notices provide information about how to avoid a situation or condition that can cause serious personal injury or death.



**DANGER**

La mention Danger fournit des informations sur les moyens de prévenir une situation ou une condition qui pourrait entraîner un risque de blessure grave ou mortelle.



**DANGER  
GEFAHR**

Gefahrenhinweise stellen Informationen darüber bereit, wie man Situationen oder Umständen verhindert, die zu schweren Personenschäden oder Tod führen können.



**DANGER  
PELIGRO**

Los avisos de Peligro brindan información acerca de cómo evitar una situación o condición que pueda causar lesiones personales graves o la muerte.



**DANGER  
PERIGO**

Avisos de perigo oferecem informações sobre como evitar uma situação ou condição que possa causar graves ferimentos ou morte.



**DANGER  
PERICOLO**

Le indicazioni di pericolo forniscono informazioni per evitare situazioni o condizioni che potrebbero causare gravi danni alle persone o il decesso.





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## Software license

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This section contains the Nortel Networks software license.

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## New in this release

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The following sections detail what's new in *Nortel Ethernet Routing Switch 8600 Installation — Media Dependent Adapters for the 8672ATME and 8672ATMM Modules*, NN46205-316 for release 5.0.

- [“Features” \(page 21\)](#)
- [“Other changes” \(page 21\)](#)

### Features

This document contains no feature updates in release 5.0 .

### Other changes

See the following section for information about changes that are not feature-related:

#### Document changes

This document is modified to meet Nortel Customer Documentation Standards. For more information about these standards, see *Nortel Ethernet Routing Switch 8600 Documentation Roadmap*, NN46205-103.



# Introduction

---

This guide describes how to install the *Media Dependent Adapters (MDAs)* for the 8672ATME and 8672ATMM Modules on Ethernet Routing Switch 8600.

## Navigation

- [“MDA overview” \(page 25\)](#)
- [“Media Dependent Adapter installation for the 8672ATME and 8672ATMM modules ” \(page 27\)](#)
- [“MDA and LED specifications” \(page 41\)](#)





## MDA overview

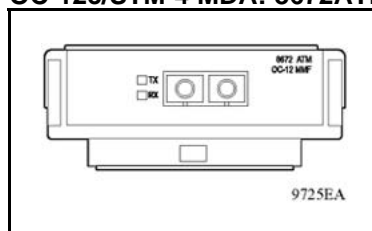
The MDAs for the Nortel 8672ATME and 8672ATMM modules are modular port adapters that are installed on the Ethernet Routing Switch 8600.

The 8672 ATM modules are part of the Nortel 8000 Series line of communications products. There are two versions of the ATM modules: the 8672ATME module and the 8672ATMM module (unless otherwise specified, the term 8672ATM modules refers to both versions).

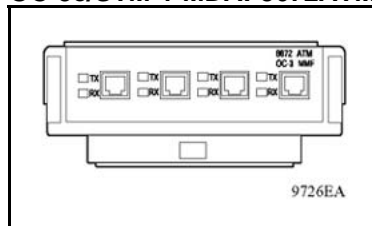
Each module has two slots for MDAs. Install any two of the following MDAs:

- 1-port OC-12c/STM-4, see [Figure 1 "OC-12c/STM-4 MDA: 8672ATME and 8672ATMM modules" \(page 25\)](#)
- 4-port OC-3c/STM-1, see [Figure 2 "OC-3c/STM-1 MDA: 8672ATME and 8672ATMM modules" \(page 25\)](#)
- 2-port DS-3, see [Figure 3 "DS-3 MDA: 8672ATME and 8672ATMM modules" \(page 26\)](#)

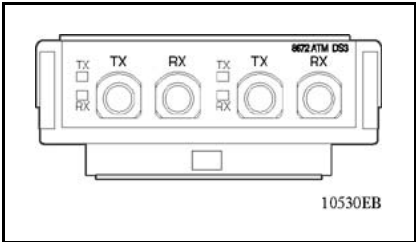
**Figure 1**  
**OC-12c/STM-4 MDA: 8672ATME and 8672ATMM modules**



**Figure 2**  
**OC-3c/STM-1 MDA: 8672ATME and 8672ATMM modules**



**Figure 3**  
**DS-3 MDA: 8672ATME and 8672ATMM modules**



Each MDA has ports for connection to an ATM network. OC-3c/STM-1 and OC-12c/STM-4 MDAs support concatenated transmission.

The flexibility of connectivity is achieved by mixing different types of MDAs. The following table shows the available types of MDAs for the 8672ATME and 8672ATMM modules.

**Table 1**  
**MDAs for the 8672ATME and 8672ATMM modules**

Port type	Model	Cable type	Connector type
OC-12c/STM-4	DS1304004	Multimode fiber	Duplex SC
	DS1304005	Single mode fiber	Duplex SC
OC-3c/STM-1	DS1304006	Multimode fiber	MT-RJ
	DS1304007	Single mode fiber	MT-RJ
DS-3	DS1304002	75 ohm coaxial	BNC

The OC-3c/STM-1 and OC-12c/STM-4 MDAs for the 8672ATME and 8672ATMM modules are Class 1 laser products as identified by the label on the MDA. See the following figure.

**Figure 4**  
**Product label for the 8672ATME and the 8672ATMM module MDA — OC-3c/STM-1 and OC-12c/STM-4**



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# Media Dependent Adapter installation for the 8672ATME and 8672ATMM modules

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This section provides procedures for installing MDA for the 8672ATME and 8672ATMM modules.

## Prerequisites

- Verify that you have the following tools and materials:
  - Phillips screwdriver #1

## Navigation

- [“Estimated installation time” \(page 27\)](#)
- [“Installing an MDA” \(page 28\)](#)
- [“Replacing an MDA” \(page 31\)](#)
- [“Connecting fiber cables” \(page 32\)](#)
- [“Connecting coaxial cables” \(page 34\)](#)

## Estimated installation time

The following table lists the estimated time to install the MDAs.

### Estimated time for installation

**Table 2**  
**Task and estimated time**

Task	Estimated time
Laying the Asynchronous Transfer Mode (ATM) module on an antistatic surface	2 minutes
Removing Media Dependent Adapter (MDA) slot covers	2–5 minutes

Table 2

Task and estimated time (cont'd.)

Task	Estimated time
Aligning the MDA with the front portion of the module and mounting the posts	2–5 minutes
Seating MDA and tightening the screws and the label	2–5 minutes
Removing dust plugs and caps	2–5 minutes
Total time required	10–22 minutes

## Installing an MDA

This procedure describes how to install an MDA on Ethernet Routing Switch 8600.

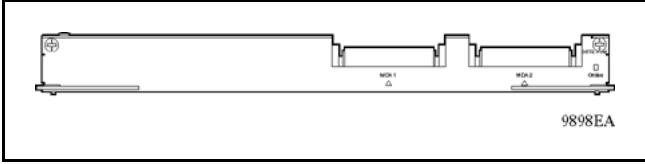
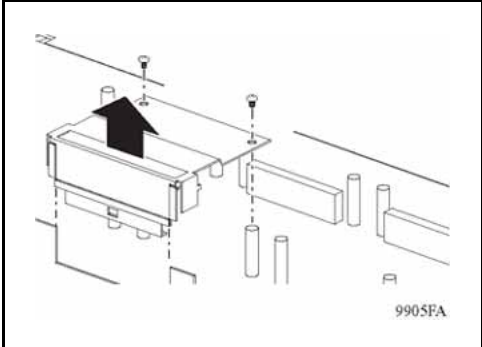


### CAUTION

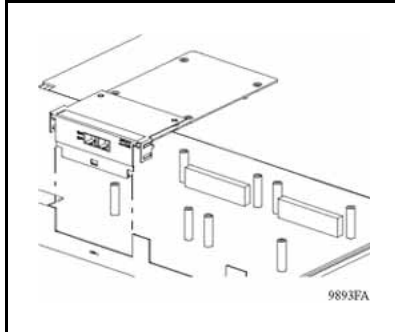
#### Risk of service loss

You cannot hot-swap an MDA. You must remove the 8672ATME or 8672ATMM module, install the MDA, and then reinstall the module. For more information about removing and installing the 8672ATME and 8672ATMM modules, see *Ethernet Routing Switch 8600 Installation — Modules*, NN46205-304.

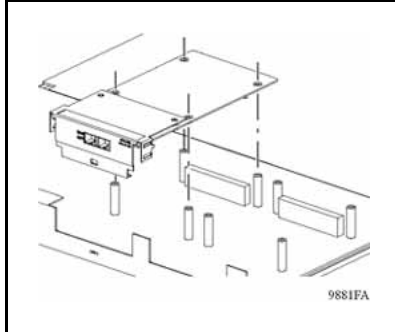
### Procedure steps

Step	Action
1	<p>Lay the 8672ATME or the 8672ATMM module on a flat, static-free surface.</p> 
2	<p>Lift the cover out of the MDA slot by unscrewing the two screws and lifting the cover straight up. Set the cover aside for possible future use.</p> 

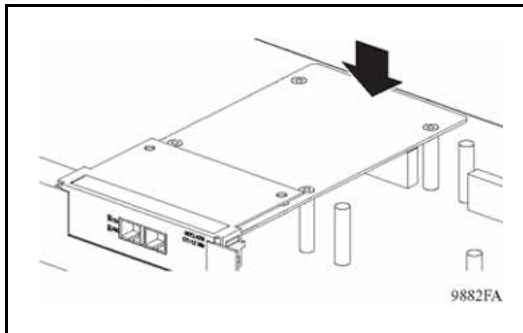
- 3 Line up the MDA with the front of the 8672ATME or the 8672ATMM module, positioning the MDA so that the front aligns with the front of the 8672ATME or the 8672ATMM module.



- 4 Align the four holes on the MDA with the mounting posts on the 8672ATME or the 8672ATMM module.

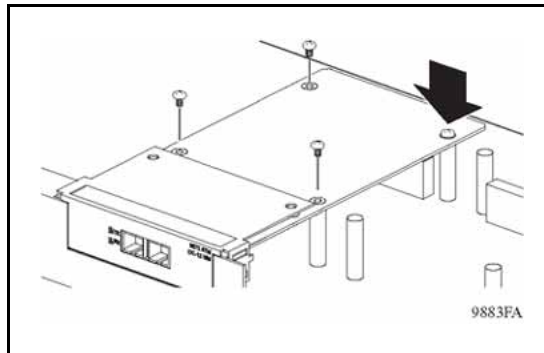


- 5 Press firmly on the MDA in the middle of the back to seat the MDA in the mounting posts on the module. Apply about 20 pounds of pressure.



When the MDA is seated properly, the posts of the module are visible in the holes of the MDA.

- 6 Insert the Phillips pan head screws through the holes. Use a #1 Phillips screwdriver to tighten the screws. Tighten the rear screws first before you tighten the front screws.



- 7 Attach the supplied laser product label to the front panel of the host module immediately below the MDA. Use the label that is printed in the appropriate language for the country where you are installing the equipment.

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--End--

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## Replacing an MDA

This procedure describes how to replace an MDA.

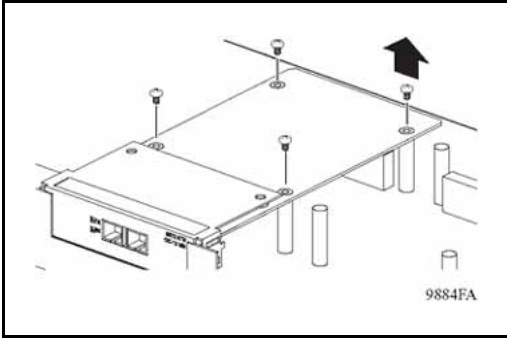
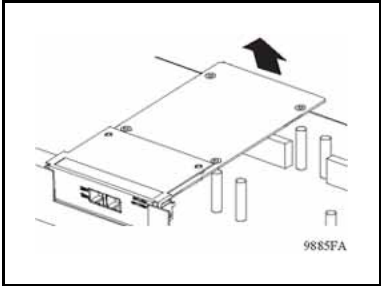


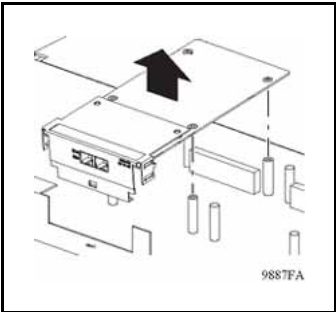
### CAUTION

#### Risk of service loss

You cannot hot-swap an MDA. You must remove the 8672ATME or 8672ATMM module, install the MDA, and then reinstall the module.

### Procedure steps

Step	Action
1	<p>Remove the 8672ATME or the 8672ATMM module from the chassis and lay it on a flat, static-free surface.</p> <p>For information about removing a module from the chassis, see <i>Ethernet Routing Switch 8600 Installation — Modules</i>, NN46205-304.</p>
2	<p>Using a #1 Phillips screwdriver, unscrew the four screws from the MDA you want to remove.</p> 
3	<p>Place the palm of your hand on top of the MDA, and cup your fingers around the back of the MDA. Lift the MDA enough to loosen it from the mounting posts.</p> 
4	<p>When the MDA is loosened from the mounting posts, hold the sheet metal by each side and lift the MDA straight up, being careful not to catch the lip of the MDA on the module. Store the MDA in a static-free container for later use.</p>



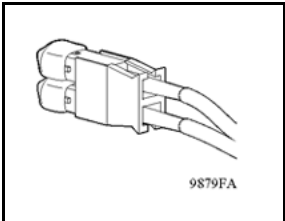
- 5 If you do not plan to install a replacement MDA, place the slot cover on the MDA slot and tighten the two screws.

--End--

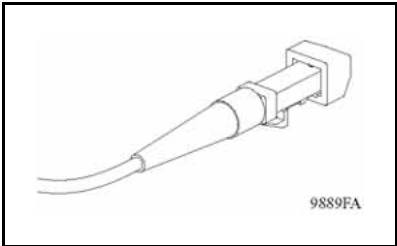
### Connecting fiber cables

This procedure describes how to connect fiber cables to the installed MDA. The OC-12c/STM-4 MDA uses duplex SC connectors. See [Figure 5 "OC-12c/STM-4 MDA duplex SC connector with dust caps"](#) (page 32). Also, the OC-3c/STM-1 MDA uses MT-RJ connectors. See [Figure 6 "OC-3c MDA/STM-1 MT-RJ connector with dust cap"](#) (page 32).

**Figure 5**  
**OC-12c/STM-4 MDA duplex SC connector with dust caps**



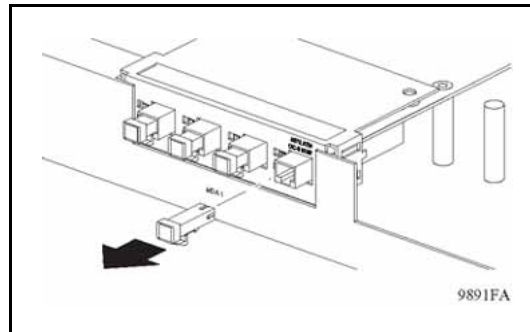
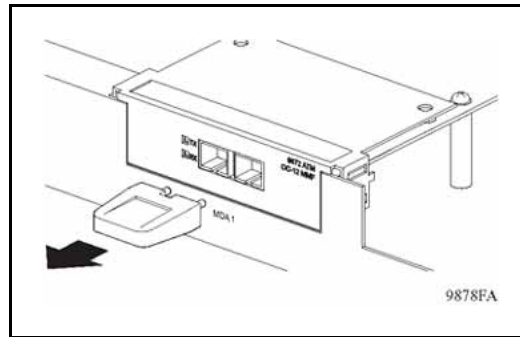
**Figure 6**  
**OC-3c MDA/STM-1 MT-RJ connector with dust cap**



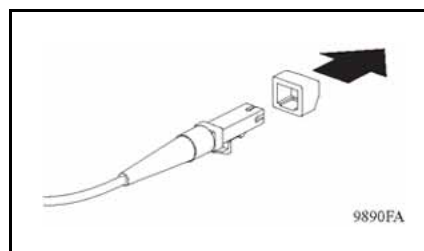
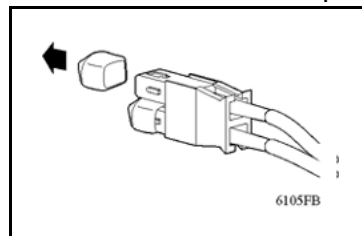
#### Procedure steps

Step	Action
1	Remove the protective dust plug from the connector on the installed MDA. Store the dust plug for later use.

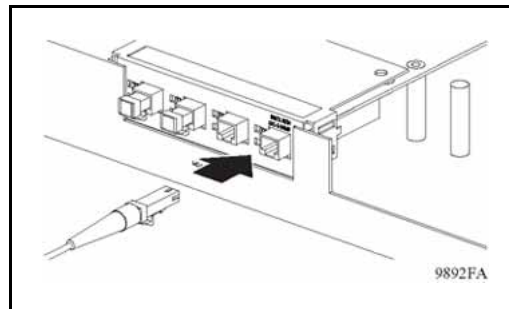
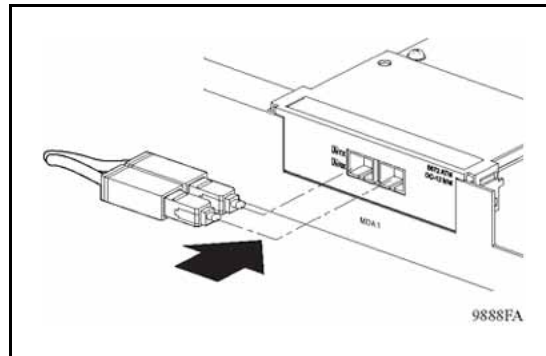




- 2 Remove the protective dust caps from the connector on the fiber cable. Store the dust caps for later use.



- 3 Hold the fiber cable connector so the keyed surface will insert easily into the MDA connector. Carefully insert the cable connector into the MDA connector and push gently.



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--End--

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## Connecting coaxial cables

This procedure describes how to connect coaxial cables to the MDA.

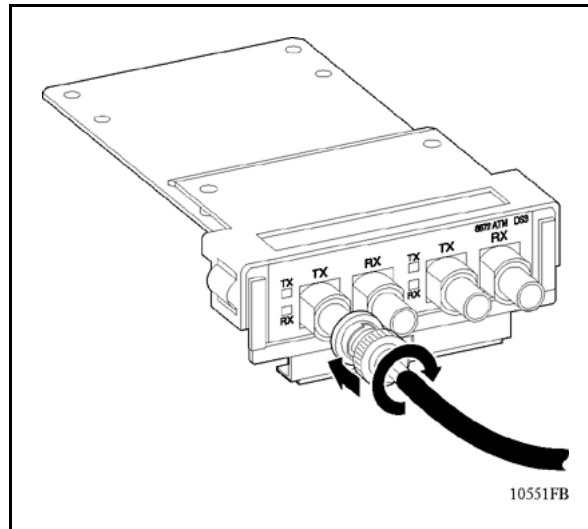
### ATTENTION

The DS-3 MDA uses bayonet Neill-Concelman (BNC) connectors.

### Procedure steps

Step	Action
------	--------

- |   |   |
|---|---|
| 1 | Push the coaxial cable onto the DS-3 connector. |
|---|---|



- 2 Turn the coaxial cable to the right until the key on the DS-3 connector clicks into the notch on the coaxial cable.

--End--



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## Translation of Safety messages

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### Class A product caution statement

**CAUTION**

This device is a Class A product. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users are required to take appropriate measures necessary to correct the interference at their own expense.

**CAUTION  
ATTENTION**

Le périphérique est un produit de Classe A. Le fonctionnement de cet équipement dans une zone résidentielle risque de causer des interférences nuisibles, auquel cas l'utilisateur devra y remédier à ses propres frais.

**CAUTION  
ACHTUNG**

Dies ist ein Gerät der Klasse A. Bei Einsatz des Geräts in Wohngebieten kann es Störungen des Radio- und Fernsehempfangs verursachen. In diesem Fall muss der Benutzer alle notwendigen Maßnahmen ergreifen, die möglicherweise nötig sind, um die Störungen auf eigene Rechnung zu beheben.

**CAUTION  
PRECAUCIÓN**

Este es un producto clase A. El uso de este equipo en áreas residenciales puede causar interferencias nocivas, en cuyo caso, se requerirá que los usuarios tomen cualquier medida necesaria para corregir la interferencia por cuenta propia.



**CAUTION  
CUIDADO**

Este dispositivo é um produto Classe A. Operar este equipamento em uma área residencial provavelmente causará interferência prejudicial; neste caso, espera-se que os usuários tomem as medidas necessárias para corrigir a interferência por sua própria conta.



**CAUTION  
ATTENZIONE**

Questo dispositivo è un prodotto di Classe A. Il funzionamento di questo apparecchio in aree residenziali potrebbe causare interferenze dannose, nel cui caso agli utenti verrà richiesto di adottare tutte le misure necessarie per porre rimedio alle interferenze a proprie spese.



**CAUTION  
CAUTION  
ESD**

To prevent damage from electrostatic discharge, always wear an antistatic wrist strap connected to an electrostatic discharge (ESD) jack when performing maintenance on this product. Ensure that the wrist strap makes contact with your skin.



**CAUTION  
CAUTION  
ATTENTION ESD (décharge électrostatique)**

Pour prévenir tout dommage dû à une décharge électrostatique, vous devez toujours porter un bracelet antistatique connecté à une prise pour décharge électrostatique (ESD) lors de l'exécution d'opérations de maintenance sur ce produit. Assurez-vous que le bracelet antistatique est en contact avec votre peau.



**CAUTION  
CAUTION  
PRECAUCIÓN ESD (Descarga electrostática)**

Para prevenir el daño producido por una descarga electrostática, use siempre una pulsera antiestática conectada a un enchufe de descarga electrostática (ESD) al realizar el mantenimiento de este producto. Asegúrese de que la pulsera antiestática haga contacto con su piel.



**CAUTION**  
**CAUTION**  
**CUIDADO ESD**

Para evitar danos com descarga eletrostática, sempre use uma pulseira antiestática que esteja conectada a uma tomada de descarga eletrostática (ESD) quando estiver realizando a manutenção deste produto. Certifique-se de que a pulseira esteja em contato com sua pele.



**CAUTION**  
**ATTENZIONE**  
**ESD**

Per evitare danni derivanti da scariche elettrostatiche, indossare sempre un polsino antistatico collegato a una presa di scarico elettrostatico (ESD) durante la manutenzione del prodotto. Accertarsi che il polsino sia a contatto con la pelle.





## Appendix

# MDA and LED specifications

See the following sections for Media Dependent Adapters (MDAs) and Light Emitting Diode (LED) specifications.

### MDA specifications

The OC-3c/STM-1 MDA uses SONET STS-3c/SDH STM-1 1300 nanometer (nm) optical transceivers with MT-RJ fiber-optic connectors and either single mode fiber (SMF) or multimode fiber (MMF) cabling.

The following table describes the 8672ATME and 8672ATMM modules MDA specifications of OC-12c/STM-1 and OC-3c/STM-4 port type.

**Table 3**  
**8672ATME and 8672ATMM modules MDA specifications — OC-12c/STM-1 and OC-3c/STM-4**

Port type	Operating wavelength	Operating power	Data rate
OC-12c/STM-4	1274 to 1356 nm	-14 to -20 dBm	622.08 Mbit/s
	1260 to 1360 nm	-8 to -15 dBm	622.08 Mbit/s
OC-3c/STM-1	1274 to 1356 nm	-14 to -20 dBm	155.52 Mbit/s
	1260 to 1360 nm	-8 to -15 dBm	155.52 Mbit/s

The following table describes the OC-3c/STM-1 MDA specifications.

**Table 4**  
**OC-3c/STM-1 MDA specifications: 8672ATME and 8672ATMM modules**

Parameter	SMF description	MMF description
Physical media	9/125 $\mu$ m	62.5/125 $\mu$ m
Line coding	NRZ	NRZ
Wavelength	1274 to 1356 nm	1274 to 1356 nm
Average transmit output power	-8 to -15 dBm	-14 to -20 dBm
Average receiver sensitivity	-8 to -28 dBm	-14 to -30 dBm

**Table 4****OC-3c/STM-1 MDA specifications: 8672ATME and 8672ATMM modules (cont'd.)**

Parameter	SMF description	MMF description
Distance	15 km	2 km
Input power	40 W	40 W
Thermal rating	138 BTU/hour maximum	138 BTU/hour maximum

The OC-12c/STM-4 MDA uses SONET STS-3c/SDH STM-1 1300 nm optical transceivers with duplex SC-type fiber-optic connectors and either single mode fiber (SMF) or multimode fiber (MMF) cabling. The following table describes the OC-12c/STM-4 MDA specifications.

**Table 5****OC-12c/STM-4 MDA specifications: 8672ATME and 8672ATMM modules**

Parameter	SMF description	MMF description
Physical media	9/125 $\mu$ m	62.5/125 $\mu$ m
Line code	NRZ	NRZ
Wavelength	1274 to 1356 nm	1274 to 1356 nm
Average transmit output power	-8 to -15 dBm	-14 to -20 dBm
Average receiver sensitivity	-8 to -28 dBm	-14 to -26 dBm
Distance	15 km	500 m
Input power	40 W	40 W
Thermal rating	138 BTU/hour maximum	138 BTU/hour maximum

The DS-3 MDA uses a 75 ohm coaxial cable. The following table describes the DS-3 MDA specifications.

**Table 6****DS-3 MDA specifications: 8672ATME and 8672ATMM modules**

Parameter	Specification
Line rate	44 736 Mbit/s (20 ppm)
Impedance	75 ohms
Maximum length	450 feet (135 m)

## LEDs

The MDAs have two bicolor LEDs on each port: one marked as TX (transmit) and the other as RX (receive). The following table describes the MDA LED indications.

**Table 7**  
**MDA LED indications**

Label	Color	State	Meaning
TX	Green	Steady	Indicates network activity for the corresponding port. A very low level of network activity (approximately 1–5 pps) can cause the LED to blink.
	—	Off	The port is not transmitting data (no network activity).
	Amber	Blinking	The port is out of order; the administrative state is down.
RX	Green	Blinking	Indicates network activity for the corresponding port (the port is receiving traffic).
	Green	Steady	The port is operational; no network activity.
	Amber	Blinking	The port is not operational; the administrative state is down.
	Amber	Steady	<p>A Remote Defect Indication (RDI) alarm condition has been detected; the administrative state is down.</p> <p>The RDI alarm condition indicates that a failure occurred at the far end of the network. In ATM, when the physical layer detects loss of signal or cell synchronization, RDI cells are used to report a VPC/VCC failure. RDI cells are sent upstream by a VPC/VCC endpoint to notify the source VPC/VCC endpoint of the downstream failure.</p>
	—	Off	The port is not operational. Be sure that the MDA is fully seated in the slot; check that the port is properly configured.





Nortel Ethernet Routing Switch 8600

## Installation — Media Dependent Adapters for the 8672ATME and 8672ATMM Modules

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For information about the software license, read "Software license" in this guide.

For a list of safety messages used in this guide and their translations, see "Translations of safety messages".

